Report to

WA State Office of Financial Management

Grants, Contracts and Loans Feasibility Study

Work Plan

Washington State *Roadmap*

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1. INTRODUCTION

1.1. Purpose

The purpose of the Grants, Contracts and Loans Management (GCLM) Work Plan document is to list and describe, to the extent feasible, the anticipated tasks, resources and schedule needed to implement the recommended solution. Because the recommended solution is a Best-of-Breed software application which has not yet been selected, the tasks, resources and schedule can only be addressed generically and at a high level.

The work plan described in this document is meant to aid the planning for implementing a Best-of-Breed product by describing the factors to address before implementation and the tasks, resources and priorities with which to address them.

Considerable attention has been given to the advance planning needs, as this is an early project implementing Roadmap principles, and as such can be expected to break new ground and create expectations for future Roadmap projects. Issues addressed are: communication; acceptance criteria; project change control; organizational impact; impact on laws, policies and procedures; phasing and dependencies; and hardware and software environment.

This document also addresses implementation activities including testing, conversion, training, and cutover support.

Ongoing support needs and anticipated costs are also presented, as well as phases and a high-level work plan for the implementation.

1.2. Background

The Washington State Department of Ecology must replace its aged Contracts & Grants Management System that processed transactions totaling $392 million in the 2003-2005 biennium. OFM has proposed that Ecology's replacement be directed into an enterprise system for Washington State to be used by multiple agencies for grants, contracts, and loans management. Benefits are avoidance of duplicative systems costs among agencies, cross-agency monitoring of projects, and improvement of core business practices. OFM is leading the effort, joined by the Departments of Ecology (ECY) and Community, Trade and Economic Development (CTED) as the first customers of the new system. An enterprise system is also mission-critical to CTED; it distributes over $1.2 billion in new and existing contracts and loans through manual procedures and spreadsheets and seeks improved business practices and information systems.

Monies spent toward such systems provide a unique opportunity to address not only ECY's and CTED's needs but also achieve:

- Avoidance of duplicative system' costs among agencies.
- Improved monitoring of projects. Agencies with programs for environmental quality could share project information, as recommended in the 2001 report by the Joint Legislative Audit and Review Committee, "Investing in the Environment: Environmental Quality Grant & Loan Programs Performance Audit."
- Improved management of many types of contracts and of loans.
- Automated fiscal processes to achieve efficiencies in the payment, receipt and accounting for funds.
- Electronic access to those applying for grants, requesting payments, or seeking information.

The Proposed System will be a *Roadmap* Business Initiative. The *Roadmap* is a multi-year effort to improve and integrate the state's financial and administrative processes and information systems (More information is available at http://www.OFM.WA.GOV/Roadmap). As a *Roadmap* business initiative, this Enterprise Grants, Contracts & Loans Management System will be an early adopter of three key *Roadmap* approaches:

- **Business process modeling**. Business process modeling is being conducted to document the "as-is" business processes and the "could-be" future model. The "could-be" model will serve as a starting point for the feasibility study and will represent a common understanding of the best practices to be implemented by the State. The "could-be" model will also identify key policy changes that may be necessary, key common information requirements, and establish the value proposition that can be achieved. The "could-be" models related to grants, contracts and loans management are recently available.
- **Integration architecture**. A common integration architecture for the State's financial and administrative systems is being developed under the authority of the state's Enterprise Architecture committee. This architecture will consist of principles, policies, reference models and standards. The integration architecture will be designed to address the following questions:
  - What is the technical architecture that will allow core financial and administrative systems and business processes to be implemented incrementally with confidence that all of the pieces will fit together as they come on-line?
  - What are the clear and consistent guidelines for central systems providers and line agencies that allow core financial and administrative systems to fit within the State's current environment of common and agency "shadow systems"?
  - How can financial and administrative systems be constructed to allow business process solutions to be composed of agency unique and central, common components?

This architecture is under development at the time of the feasibility study. The feasibility study will take into account the integration architecture direction and requirements as known at that time.

Performance measurement. *Roadmap* business initiatives provide the opportunity to apply Government Management Accountability and Performance principles to the state's "back office" business processes. The performance indicators for grants, contracts and loans management is recently available as part of the business process modeling described above.

This feasibility study will allow OFM, ECY and CTED to plan for an enterprise solution for grants, contracts and loans management (within the scope of this project) by documenting:

- The requirements for an enterprise grants, contracts and loans solution
- The business case for proceeding with such a solution
- The alternatives – and costs and benefits – for a solution and a recommended solution

And, for the recommended solution:

- A conceptual design
- A work plan
- A risk management plan

The first four documents have been completed and their content approved, including the recommendation of proceeding with a Best-of-Breed solution. This document describes an anticipated work plan to implement a generic Best-of-Breed application meeting the project's requirements.

1.3. Approach

The Project Steering Committee has accepted the recommendation to detail the Best-of-Breed solution alternative. Because a product has not been selected, the team approached the work plan from its own experience and the experiences of other teams implementing COTS packages in general and agreement management packages specifically. The Sources section below lists the specific projects and reports we studied to present the recommended activities in this document.

1.4. Sources

Sources for information in this document include:

CMS Software Requirements Specifications, CTED, June 2005: contracted study with seven appendices, summarizing findings on the requirements for a contract management system for CTED.
CMS Housing Trust Fund Storyboard, CTED, November 2005: contracted study with requirements for the Housing Division, including sample screen designs.
Contracts, Grants and Loans Project Preliminary Requirements Analysis, ECY June, 2005: contracted study with future process flows and high level requirements.
Grant Management Value Proposition, version 0.6, February, 2006: a description of the "to be" processes for grants and loans and the potential value in harmonizing common business processes produced by the State of Washington Enterprise Business Process and Data Modeling for the Roadmap for Financial and Administrative Policies, Processes, Systems and Data initiative. WA Roadmap publications can be found at the website: http://www.ofm.wa.gov/roadmap/modeling/grantmanagement.htm
Washington State Enterprise Architecture Program Integration Architecture Initiative Charter, EA Committee Document version 1.3, December, 2005: Description of issues to be addressed by the statewide enterprise architecture initiative, a list of the Documenter Team, and initiative timeline.
Berk & Associates Inventory and Evaluation of the State's Public Infrastructure Programs and Funds report dated December 16, 2005, http://www.ofm.wa.gov/roadmap/modeling/grantmanagement.htm
JLARC Investing in the Environment: Environment Quality Grant & Loan Programs Performance Audit, Report 01-01 dated January 22, 2001
State of Minnesota Grants Management Business Case for Change documentation, 2005, (http://www.state.mn.us/portal/mn/jsp/content.do?programid=536907838&agency=Excellence) from the State of Minnesota Drive to Excellence Transformation Roadmap, including: Grants Management Business Case for Change Enterprise Grants Management Governance and Process Improvement Enterprise Grants Management Tools
Electronic Grants - Management Systems in State Criminal Justice Administering Agencies - An Assessment, Final Report, Bureau of Justice Assistance, April 2005, http://www.ncja.org/egms-assessment.html
Best Practices in Automated Grant Management, White Paper involving the Missouri Department of Elementary Secondary Education, by MTW Solutions, LLC, http://www.mtwsolutions.com/psd/pdfs/extracts/automatedGrantManagement.pdf
Electronic Grants System Concept Paper, State of Texas Department of Information Resources Electronic Grants Technical Assistance Workgroup, July 25, 2002, http://www.dir.state.tx.us/peso/egrants
Electronic Grants Management Report, Texas State Department of Information Resources Program Management Office, February 2002, http://www.dir.state.tx.us/pubs/egrants/eGrant-Mgt-Rpt.htm
E-Grants Business Case Summary, E-Grants Program Management Office of the US Department of Health and Human Services, June 2002, http://www.grants.gov/assets/BusinessCaseSummary.pdf
State of Washington OFM Accounts Receivable Feasibility Study, 2004, http://www.ofm.wa.gov/roadmap/links.htm

State of Washington OFM Capital Asset Management System Feasibility Study, 2004, http://www.ofm.wa.gov/roadmap/links.htm
State of Washington DOT Consumable Inventory System Feasibility Study, 2004, http://www.ofm.wa.gov/roadmap/links.htm

1.5. Relationship to Other Deliverables

The Work Plan document is made possible by work done in developing the Definition of Requirements, Emerging Business Case and Preliminary Recommendation, Alternatives Analysis and Recommendation, and Conceptual Design documents. This document follows up on the accepted Best-of-Breed recommendation and, in turn, will be built upon in the remaining document :

- The Risk Plan will document the risks in implementing the selected Best-of-Breed solution in a risk management plan that includes the risk type, likelihood, impact and exposure as well as strategies for avoidance, mitigation and control.

2. IMPLEMENTATION PLANNING

2.1. Communication

2.1.1. Overview

Effective communication is a critical success factor for any project and must be managed as such. Communication begins before and continues after the project and includes such important items as the funding model for the project, the expected agency participation in project activities, progress reporting, cutover and training schedules.

The communication planning process determines the information and communications needs of the stakeholders: who needs what information, when they will need it, how it will be given to them and by whom. Communication requirements analysis is needed to determine the sum of the information needs of the project.

Identifying appropriate audiences (WHOM), ensuring effective methods of communication (HOW), assuring appropriate levels of communication – timing/frequency (WHEN), ensuring relevant, accurate and consistent communication (WHAT), and managing project expectations are some of the objectives of a comprehensive project communication plan.

Two levels of communication must exist: communication within the team (inter-project communication) and communication outside the team to key executives and project stakeholders. Project stakeholders would include internal (Washington State) and external (Applicants/Recipients, Federal Agencies) entities.

The first level, inter-project communication, is typically a project management responsibility. The project team could include assigned State agency staff, consultants (implementer, QA), and vendor representatives. The project manager(s) and all other members of the team must work together to ensure that regular communication occurs between all formal team members. A good inter-project communication plan will include the appropriate balance of meetings, reports, telephone calls, and email and fax communications. Project team meetings will be planned as required. Any potential risks or project changes that could impact the successful completion of the project will be proactively identified, analyzed, and discussed with both project management and the project steering committee.

The second level of communication is project to stakeholder. The stakeholders may be internal to the organization or external to the organization and are individuals or organizations that will use the system in some way. Success of any project depends to a large degree on the buy-in and ownership of the key stakeholders and the users of the solution.

2.1.2. GCLM Implementation Communication

The purpose of the communication stream in implementation is to support the implementation process through the managed dissemination of information to all identified stakeholders in ways that are appropriate, at carefully selected times, and using methods that will have optimum impact. This will enable the successful and positive introduction of changes effected by the implementation.

OFM has much experience in communicating to key internal stakeholders across agencies for implementing statewide financial systems and delivering successful projects. The partnering agencies have experience in communicating with key external stakeholders – funders, applicants, and recipients. OFM and the partnering agencies will need to use this experience to develop the appropriate communication plan for the implementation of the enterprise Grants, Contracts, and Loan Management System.

Section 2.4 Organizational Impact, expands on this concept by suggesting project groups

The following table identifies key stakeholders, both internal and external, their interest and influence level and possible project concerns for each.

Type	Stakeholder Group	Interest or Concern	Interest and Influence Level (H, M, L)
Internal			
	State agencies that manage grants		H
	Agency Program Offices	Policy or procedure changes impacting the way they manage sub-grants	H
	Agency Fiscal Offices	Policy or procedure changes impacting State financial systems and reporting	H
	Partner Agencies - CTED, ECY	Policy or procedure changes impacting project governance or plans	H
	Central Service Agencies OFM, DOP, DIS, GA	Policy or procedure changes impacting planned project schedule, governance or plans	H
	GCLM Project Groups/Teams		
	Executive Steering Committee	Policy or procedure changes impacting planned project schedule, governance or plans	H
	Governance Committee	Policy or procedure changes impacting planned project schedule, governance or plans	H

Type	Stakeholder Group	Interest or Concern	Interest and Influence Level (H, M, L)
		Issues raised above the agency level	
	Agency Advisory Group	System implementation or maintenance issues affecting one or more agencies currently or planned to use the system	H
	Program Liaison Team	Policy or procedure changes or system changes impacting the way program staff manage sub-grants	H
	Implementation Team	Policy or procedure changes impacting planned project schedule Implementation issues	H
	Project Change Control Committee	Evaluation of project change requests to determine whether the change is desirable and feasible (impacts to project scope, plan or budget)	H
	Office of the Governor	Progress and status of the State in providing efficient and leading practices in agreement management	L
	Legislature	How proposed changes impact their constituents How the expenditure of project funds achieved their goals	L
	Special Committees		
	Roadmap	Policy or procedure changes impacting planned project schedule or other Roadmap projects or plans Implementation issues affecting other Roadmap projects or plans How the success of the project affects other Roadmap projects or plans	H
	Washington State Enterprise Architecture Program	Policy or procedure changes impacting planned project schedule or other Enterprise projects, standards or plans Implementation issues affecting other Enterprise projects, standards or plans How the success of the project affects other Enterprise projects, standards or plans	M
	State Grants and Contracting Groups	Policy or procedure changes or system changes impacting the way	L

Type	Stakeholder Group	Interest or Concern	Interest and Influence Level (H, M, L)
		they manage contracts	
	Priorities of Government	Information available on agreement management goals and achievements and their contribution to larger goals	L
External			
	Funders – Funding Sources	Policy or procedure changes impacting planned project schedule	L
	Applicants	Policy, procedure or system changes impacting the sub-grants available or the way they apply or comply with them	M
	Recipients	Policy, procedure or system changes impacting the sub-grants available or the way they apply or comply with them	M

Communication will occur throughout all phases of the project. During planning and implementation, it will be advantageous to involve as many stakeholder groups as reasonably possible given physical and process constraints. An effective implementation will require involvement of individuals from various agencies that will be part of the "front" and "back" office operations of the system. External stakeholders should be involved in the implementation, although their role may be limited and their participation may be direct or indirect.

It is of critical importance that external stakeholders have early and adequate notice and information about process changes including how to find and apply for grant opportunities and specific changes in application information requirements. Advance notice of process changes and early customer training and assistance programs should be developed by each agency and program. Responsibility for this effort will rest with the GCLM Program Liaison Team, described in Section 2.4.

The remaining sections of this document contain further information on communication during the testing, training, and roll-out phases of the implementation project.

2.2. Acceptance Criteria

The approach to acceptance testing is to demonstrate that the system delivered can successfully perform all of the functions required by the client. In implementing a state-wide grants, contracts,

and loans management system, there will be multiple provider/client relationships involved in the acceptance process.

2.2.1. Software

OFM would have responsibility for acceptance of software installation and configuration. The software must have demonstrated ability to meet the GCLM non-functional requirements in the state's technology environment for all three platforms: development, test and production. This would involve, at a minimum, evaluating results from volume, usability, security, stress and load testing and architectural standards. Because quality tests require quality data, these activities are dependent on implementation conversion activities. Acceptance will also include delivery of appropriate training and documentation for OFM and other designated state agency personnel as needed to maintain the system.

The final aspect of acceptance criteria involves OFM and the state agencies and is configuration acceptance, or business process acceptance by the state agencies of the implemented GCLM solution. It is documented by the agencies' formal acceptance of the implemented GCLM solution to meet the GCLM functional requirements. This activity is preceded by user acceptance testing and encompasses vendor software configuration, interface development, and any custom builds.

The GCLM functional and non-functional requirements are documented in the Grants, Contracts, and Loans Management Definition of Requirements document which is one of the other deliverables from this feasibility study as noted in Section 1.5 of this document.

2.2.2. Services

For the acquisition of services to implement the GCLM solution, OFM would be the executor of any contract involving third-party service providers and would therefore be responsible for acceptance of these services. Evaluation of services would involve the statement of work and definition of deliverables in the executed contract.

2.3. Project Change Control

The implementation of a state-wide grants, contracts, and loans management system will have a significant impact on numerous State agencies and independent boards, therefore requiring a strong change management structure for this project. The types of project impacts to agencies include:

- Significant agency investments in personnel, systems and processes supporting agency sub-grant management activities.

- Preparation for changes visible to agency sub-grant and loan recipients and contractors.
- Potential impacts of enterprise governance on agency policies and procedures.
- Potential impacts on agency planned technology investments.

The major components of a strong change management plan are processes for change control and integration management.

2.3.1. Change Control

Change is inevitable on any project. As one of the initial activities for this project, OFM will need to establish change control procedures jointly with participating agencies, so everyone involved in the project is aware of how to request a change in scope or functionality.

Change control refers to a series of procedures and development standards by which all development and modifications to project scope are measured and approved. All potential changes are compared against the project baseline in terms of functionality, schedule, cost, and resources.

A project's change control system provides a standardized, effective and efficient process to centrally manage changes. Project-wide application of change control procedures accomplishes three main objectives:

- Establishes an evolutionary method to consistently identify and request changes to established baselines and to assess the value and effectiveness of those changes.
- Provides opportunities to continuously validate and improve the project though considering the impact of each change.
- Provides the mechanism for the project management team to consistently communicate all changes to the project stakeholders.

The change control must identify the effort and cost impact of the change and the recommended solution for the change. Consideration must be given to the impact on system configuration, user friendliness and training, ease of applying upgrades, documentation and performance.

It is important for all project team members, not just the project manager, to be active in the area of change detection. Change is not limited to internal sources. Potential changes may be precipitated by changes in program/agreement requirements from external stakeholders such as funders.

All changes need to be reviewed for potential impacts prior to being accepted by a change control committee jointly staffed by agencies, OFM and the implementing contractor. Evaluation determines whether a change request is both desirable and feasible. If not, the request may end there with the reasons documented on the change control log. Otherwise, the evaluation proceeds

with a detailed impact analysis together with an estimate of the time and effort required to implement the change.

Change requests outside the scope or purview of the agencies and OFM to act on, such as changes to policies, statues or legislative mandates need to be raised to the GCLM Governance Committee and the Executive Steering Committee described in section 2.4.

The GCLM Agency Advisory Group will play a strong role in reviewing change requests relative to processes and policies. This allows a neutral (non-agency specific), collaborative approach to change evaluation and will provide better guidance on keeping an enterprise perspective.

This process provides OFM and the partnering agencies with the flexibility to adapt to a changing legislative environment or to make changes to the project while implementing the controls to contain the scope. As part of its project management methodology, OFM will develop forms to assist project participants and standardize how changes are requested and reported.

2.3.2. Application Integration and Change Management

To be successful in undertaking an initiative of this magnitude, project governance must plan and organize to handle implementation issues impacting organization, processes and human resources. Without focus on these issues, the project will be at risk. In fact, the key reason why many projects fail is because this area is ignored or not addressed sufficiently. Contractors can also assist in defining and delivering the integration and change management activities needed to address organization and staff issues that will arise.

In a system-wide implementation and particularly when the implementation crosses agencies, decisions about whether to implement change to the business process or the application (either configuration or code) can be difficult. Often, clients would prefer to modify the application as a more expedient way of obtaining buy-in from the user. However, these decisions must be considered in light of the enterprise and the overall integration of technology and business processes to make good, comprehensive decisions at the outset rather than trying to retrofit a business solution.

Major areas of focus in industry standard integration and change management strategy are:

- Business process improvement.
- Agreement management and financials best practices.
- Policy review and design.
- Organization review and design.
- Key performance indicators (KPIs) review and design.
- Training and assimilation.

- Management/union liaison.

As reflected in later sections of this document, we recommend ECY, CTED and OFM, with enterprise representatives, working out the common processes and configurations, before addressing the details of any one program.

2.4. Organizational Impact

2.4.1. Background

Several recent State of Washington studies have indicated that benefits could be achieved in grant management processes through organizational changes.

The Berk & Associates study of selected Washington State Public Infrastructure Programs and Funds (see Section 1.4 Sources of Information) has identified several recommendations for aligned organizational structures to support improved grants management processes:

- Create an infrastructure policy forum to coordinate across agencies and programs.
- Group CTED's infrastructure programs in one division within the agency.

The JLARC Environmental Quality Grant & Loan Programs Performance Audit recommended that:

> "All agencies under this performance audit should work jointly and collaboratively with local governments and other funding recipients to streamline and better integrate the project application, selection, implementation, and monitoring process across programs."

The extent to which such policies and initiatives are carried out will impact and could reduce the potential benefits from the implementation of a statewide enterprise grants, contracts, and loans management system.

Even excluding the potential impact of these recommendations, the implementation of a state-wide GCLM solution will:

- Result in changes to the sub-grants, contracts, and loans management processes of the agencies using it.
- Require the establishment of on-going and implementation organizational units as described in the following sections.

2.4.2. On-Going

On-going organizational impacts to state agencies would include the establishment of governance and training/support structures.

Governance is critical to the success of a state-wide grants, contracts, and loans management system. The lack of governance and authority for agreement management standardization in policies, procedures, and tools will lead to a cumbersome solution that may not achieve the benefits outlined in the Business Case.

It is imperative that an entity be established with the authority to get agencies and independent boards to work together to find common ground regarding grant management processes and systems. The State will need to leverage and build on the enterprise framework established by the Roadmap for Washington State Financial and Administrative Policies, Processes and Systems. An enterprise governance structure and framework is currently supported by the State of Washington Central Service Agencies: OFM, DOP, DIS, GA, and OST. The grants, contracts, and loans management processes fall within the WA State core end-to-end business process of Cost Accounting Cycle. OFM and DOP have statutory responsibilities for these business processes.

We envision three teams being established to support the GCLM governance and training/support structures:

- GCLM Governance Committee
- GCLM Enterprise Advisory Group
- GCLM Support Services Group

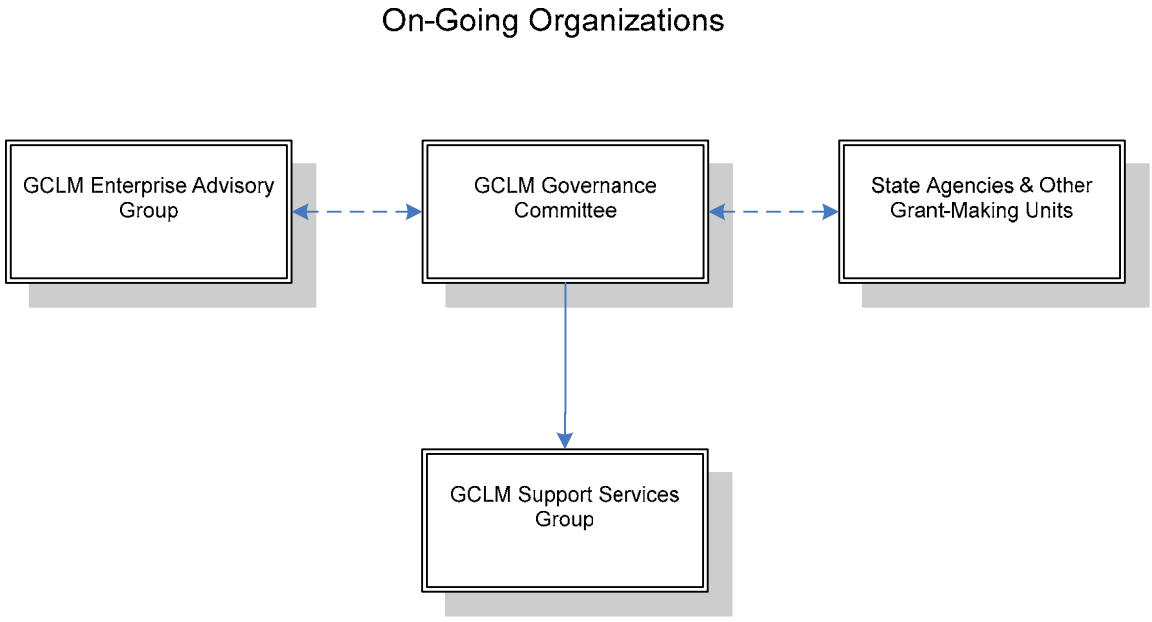


Figure 1 Potential Governance Team Structure

The GCLM Governance Committee would be made up of executive representation from the state central service agencies – DOP, DIS, GA, and OFM, and a limited number of senior management resources from State agency program and fiscal divisions. This group would be "chartered" and empowered to manage Washington State grant policies and facilitate process improvements. Distributing representation equally between central service agencies and other state agencies could assist in creating a "credible" and "open" group and would result in a manageable team size of eight members. Representation from non-central service agencies could be set up on a "rotation" schedule annually or per biennium to allow participation by more agencies.

Potential responsibilities for the GCLM Governance Committee would include:

- Implementing new grant policies and standards across agencies.
- Making decisions about the operation and direction of the state-wide GCLM system.
- Receiving input on priorities and direction for the GCLM system and processes from the GCLM Enterprise Advisory Group and state agencies.
- Establishing training/support on GCLM tools and processes.

It is anticipated that this group would meet monthly and would require a time commitment from its members of around four to six hours per month.

The GCLM Enterprise Advisory Group would be composed of senior representatives from program and financial divisions within grant-making agencies, boards and committees. There should be involvement by individuals from both "front" and "back" office GCLM operations. The group size could be kept at between 16 – 24 members to allow representation from a sufficient number of grant-making authorities. The focus of this group would be to increase collaboration and provide an enterprise vision for state GCLM processes and systems.

Potential responsibilities for this group would include:

- Identifying and addressing GCLM processes and policies in the development of a state-wide enterprise electronic grants, contracts, and loans management system.
- Advising the GCLM Governance Committee.
- Communicating information from the Governance Committee to specific agencies.
- Coordinating grant policy with other business processes.

This group would have the primary responsibility for establishing the decision-making principles to guide the process of determining the need for agency-specific variations.

It is anticipated that this group would meet bi-weekly during the early stages of the initial system implementation and then move back to monthly meetings. Expected time commitments could range up to eight hours per month.

The organizational impact for the training/support structure would be the establishment of a GCLM Support Services Group. Support would be based on a "federated" model of shared services using both centralized and distributed authority and resources for the implementation of a state-wide grants, contracts, and loans management system.

The GCLM Support Services Group would be composed of an OFM Product Manager and Agency Product Managers for CTED and ECY. This group would be responsible for implementing training and support on the new system and would report to the GCLM Governance Committee.

Base training on "enterprise" processes and system functions would be under the purview of OFM. Training on agency specific GCLM processes and functions would be the responsibility of CTED and ECY Product Managers.

For further information on training, see section 5, Documentation and Training of this report. At a minimum, participating agencies would have to allocate sufficient resources to perform Agency Administrator functions. OFM would have responsibility for the System Administrator functions.

2.4.3. Implementation

We envision three teams being established to support the initial implementation of the GCLM system:

- GCLM Executive Steering Committee
- GCLM Implementation Project Team
- GCLM Program Liaison Team

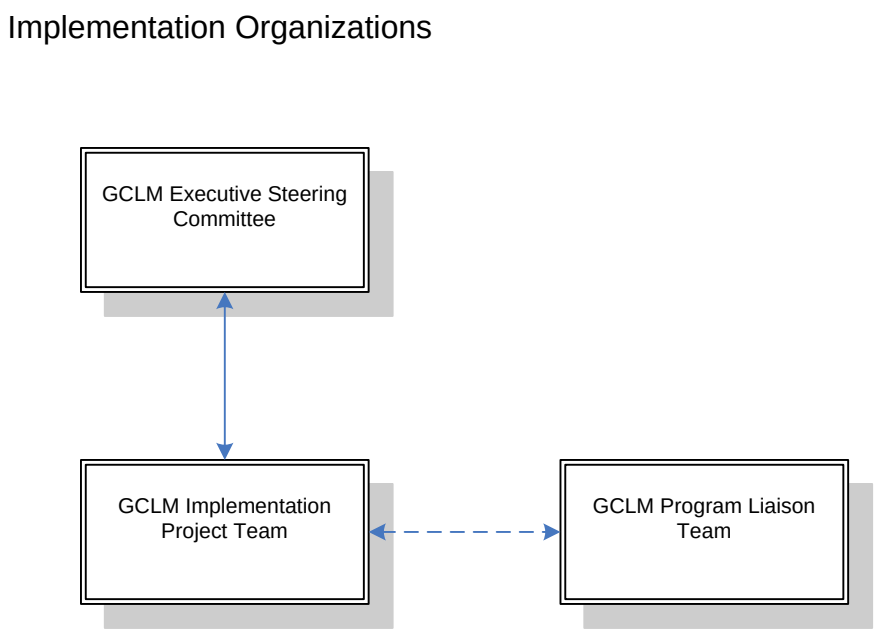


Figure 2 Potential Implementation Team Structure

The GCLM Executive Steering Committee would be made up of executive or senior management representatives from the three participating agencies: CTED, ECY, and OFM. This group would be charged with providing oversight and partner agency buy-in for GCLM strategies and implementation efforts. They would be responsible for:

- Acquiring project resources.
- Managing project risks.
- Dealing with project issues and providing quality assurance.

The committee would meet on a monthly basis for the duration of the project as indicated in Section 11, Work Plan of this report.

The GCLM Project Implementation Team would be composed of business resources from the three participating agencies (CTED, ECY, OFM) and contractor resources as needed. This team would have the primary responsibility for implementing the new grants, contracts, and loans management system for these agencies. Staffing of the GCLM Project Implementation Team is elaborated further in Section 10, Implementation Staffing of this report.

The GCLM Program Liaison Team would be composed of program level resources from the three participating agencies and would be responsible for communication and coordination with, and training of funders (sources of funds), applicants, recipients and other external stakeholders that would be users of the new system. Adoption of the new system by external users is critical to the success of this initiative. To identify and overcome obstacles to adoption in the external user community, agencies will need to allocate resources to communicate with these parties during all phases of the project including design, roll-out and training. Early notification of program or process changes and delivery of adequate customer training and support are required components of the solution.

2.5. Impact on Laws, Policies, Procedures

Although at a high-level the grants management process includes a rather standard set of processes – Find, Apply, Manage, and Close, regardless of grant program or agency, the GCLM system will have a significant impact on the granting agencies.

Acting individually and collaboratively, agencies will need to address the following issues associated with implementing the enterprise GCLM system and enact changes to laws, policies, and procedures to improve the success of this initiative.

Besides the items listed below, there are several other sources of relevant recommendations that would impact laws, policies, and procedures for grants, contracts, and loans management including:

- Berk & Associates Inventory and Evaluation of the State's Public Infrastructure Programs and Funds report dated December 2005
- State of Washington Grant Management Value Proposition, Version 0.6, dated February 2006

2.5.1. Governance

It is essential that there be appropriate enterprise planning and governance structures and framework for this initiative to ensure that:

1. A "credible" authority is established to get agencies to find common ground regarding processes and systems to facilitate standardization.
2. Key operational decisions are made for and on behalf of the enterprise.
3. An enterprise vision is maintained as the system is rolled out to more agencies.
4. Key stakeholders are involved.
5. Resources needed to implement and sustain the system are appropriated and leveraged.

There is ample knowledge and information to be leveraged from the Roadmap for Washington State Financial and Administrative Policies, Processes, and Systems and from the State's enterprise implementation of HRMS under the direction of DOP.

2.5.2. Funding

Funding will need to be secured for on-going maintenance and support and roll-out of the GCLM solution to additional State of Washington agencies, boards, and other grant-making entities. Currently allocated funding for the implementation of the GCLM solution to CTED, ECY, and OFM will need to be monitored as there are always political and budget risks that could impair funding for this initiative. Some funding options developed from leading practices in other public sector jurisdictions include:

- Direct Appropriations – appropriations from the legislature for projects that are critical and must occur as a regular part of doing business.
- Agency Share Model – Impacted agencies share in the cost of the enterprise effort.
- Project Fund – A portion of the realized project savings are placed in a project fund to provide the finances to continue the initiative.
- Portal Cost Recovery – the application is implemented and operated by the vendor at no cost to the State and the vendor is reimbursed on a per transaction basis for online services provided to customers.
- Alternative Service Delivery – Vendor is paid on an annual basis out of operating budgets, increased revenues, or project savings.
- Vendor Savings/Revenue Share – Vendor is paid from savings generated or enhanced revenues.
- Payback in Biennium – New appropriations that are offset by savings that occur within the biennium.

Since this is an early enterprise project and must lay infrastructure instead of enjoying its benefits, the first two options are more likely to be practical.

2.5.3. Shared Service Provisions

It is possible that as part of a broader statewide integrated financial system implementation, OFM would need to modify service policies, contracts and plans with the State agencies with the implementation of the GCLM solution.

Potential service level agreements between OFM and participating agencies are discussed in section 7.4 Service Level Agreements.

2.5.4. Standardization

The GCLM solution will bring significant change to agency business processes based on the enterprise perspective to standardize and implement best practices as well as features and constraints of the application itself. As established by the Roadmap initiative, compelling business justification will be needed by each agency to implement agency-specific variations in the new system. There is a need to establish decision-making principles to guide the process of determining the need for agency-specific variations. That understood, there is a limit to the standardization of terminology, data elements, forms and workflows that can be achieved.

The initiative to simplify and unify grant processes will require change. It will require agencies to change the data they collect, the way they collect it, and the way they interact with applicants and recipients. These changes will require communication among the participants and intra-agency support from executive and program levels. However, the diverse nature of many sub-grant programs and statutory and regulatory issues will limit consolidation of sub-grant forms and data requirements.

2.5.5. Single Portal

The State of Washington Grant Management Value Proposition, Version 0.6, dated February 2006 provided the following policy, process and/or system recommendation to support the "could-be" process model for grant and sub-grant management processes:

> "Create an enterprise recipient web-portal for convenient access to state grant and loan opportunities and easy communication with grant managers, submission of electronic forms, and cross-agency collaboration."

The Berk & Associates study of selected Washington State Public Infrastructure Programs and Funds (see Section 1.4 Sources of Information) produced the following recommendation for "clear strategic framework and policy direction, and management systems and processes" to support improved grants management processes:

> "Use information technology to create a single portal of electronic entry into the State's system for improved information processing, collection and reporting."

A single portal for grants, contracts, and loans management would have multiple benefits, the biggest being realized by the "customers" (applicants, recipients) who would have an easier means for finding qualifying grants across multiple agencies.

The issues with establishing a single portal are many and will require the coordinated efforts of the partnering agencies and the State's Central Service Agencies. These include:

- Should the portal be established at an existing State or Agency web site? What site should be used?
- Linking the web-sites of State grant-making bodies to the portal and vice-versa to provide a "good" customer experience.

2.5.6. Single Identifier

The State of Washington Grant Management Value Proposition, Version 0.6, dated February 2006 provided the following policy, process and/or system recommendation to support the "could-be" process model for grant and sub-grant management processes:

> "Establish an enterprise-wide standard for identifying subgrant/loan recipients and (a standard process for) registering recipients and applicants. Require use of the enterprise identifier for payment transactions."

Internal and external stakeholders will benefit from the use of unique identifiers for organizations, people, and grants that are accepted by all the State's grant making bodies. From the "customer view" (applicant, recipient), a unique identifier would reduce redundant data entry as standard information about the customer could be associated with the identifier. From the "back-office view" of the state grant-making bodies, unique identifiers would allow for the tracking of grant information across agencies and facilitate statistical analysis of grant information.

The introduction of unique identifiers will require the cooperation of all participating grant-making state bodies and may require changes to existing legacy systems.

2.5.7. Open Records Access

It is possible that some information in sub-grant applications or sub-grant monitoring documents could be considered proprietary or otherwise restricted from general access. The use of the new enterprise GCLM system could make access to sub-grant documentation broadly available after awards are announced. OFM and state agencies may need to work with the State Attorney General to clarify open record requests pertaining to sub-grant information.

2.5.8. Other Anticipated Impacts

Other policy and procedure items that will need to be addressed as part of this initiative include:

- Authorization/approval processes.
- The use of electronic signatures.
- The enablement of enterprise GIS to generate coordinates for Washington State agencies.

2.6. Phasing and Dependencies

2.6.1. Phasing

The grants, contracts, and loans management implementation project is a multi-phase project requiring flexibility with and commitment of agency staff resources.

The initial phase is an Agency Preparation phase that sets the foundation for a successful Implementation phase. The Agency Preparation phase can be executed by the State prior to contracting with vendor or implementation consultants for the GCLM solution. As noted below, the Agency Preparation phase is a critical element of the implementation.

Phase One of the Implementation covers the development of an enterprise "pilot" and the sequenced roll-out of program solutions based on this enterprise baseline in four successive cycles to CTED and ECY. Each of the four roll-out cycles for each agency is a "mini" implementation project requiring all the normal project activities including design, develop, test, convert, implement, and train. During each roll-out cycle, program specific configurations and enhancements such as specific form and report formats are identified, designed, and implemented. Conversion and cut-over activities for each program would occur within a roll-out cycle.

Based on the results of the Agency Preparation phase and the initial Business Blueprint activities of Phase One Implementation, the agencies will establish the sequencing and grouping of programs into one of the four roll-out cycles. Resourcing, budget, and time constraints will impact the allocation of programs to and the level of agency specific development in each roll-out cycle.

2.6.2. Dependencies

The major dependencies for the state-wide implementation of a grants, contracts, and loans management system are (1) agency preparation, and (2) agency staff availability.

Agency preparation involves the tasks required to establish enterprise governance and support structures for the new system and to develop the documentation necessary to develop a pilot quickly and efficiently. As noted in Section 2.4 Organizational Impact of this report, governance is critical to the success of a state-wide grants, contracts, and loans management system. The lack of governance and authority for agreement management standardization in policies, procedures, and tools will delay the selection and implementation of a solution, and could result in a cumbersome solution that may not achieve the benefits outlined in the Business Case.

As noted in the Work Plan in Section 11 of this report, the establishment of a governance and support structure should be undertaken by OFM, CTED, ECY, the remaining central service agencies, and "early adopters" of the new system working in a collaborative effort prior to the start of the implementation project to:

- Design and implement an enterprise governance and support model.
- Formalize grants, contracts, and loans management authority for governance and policy decisions.
- Define governance and support roles and responsibilities.
- Identify short-term policy and procedure improvements.
- Implement short-term improvements.

The organizational impacts of establishing enterprise governance and support structures for the new system are identified in Section 2.4 Organizational Impact.

Other agency preparation activities that will need to be executed by OFM, CTED, and ECY independently of each other include establishing a necessary "baseline" of program documentation to support the efficient development of a pilot and implementation solution, including:

- Develop a Preliminary Program Inventory by Agency identifying the number of programs, projects, recipients, contracts, program forms, program documents, and program reports in use.
- Develop a Preliminary Program Process Inventory identifying the number of workflows involved in each GCLM process for each grant program and the number of steps in each workflow.
- Develop a Program Catalogue with examples of forms (e.g., application), documents (e.g., awards, agreements, contracts, etc.), and reports for each grant program.
- Develop a Preliminary Program Inventory Prioritization identifying the number and type of forms, documents, reports, and workflows required at go-live.

Delays in executing agency preparation activities will likely increase the cost and/or extend the project timeline.

Agency staff availability for agency program, administrative and fiscal staff to participate in project activities will have a great impact on the success of the implementation project. Conflicts with other responsibilities or inflated workloads due to other internal agency projects, legislative activity creating new or modifying existing agency grant programs, and the application funding cycles for the agency grant programs will impact the ability of staff to complete project activities on a timely basis in accordance with the project plan.

Application funding cycles vary by agency grant program. As noted in the Berk & Associates Study of Public Infrastructure Programs and Funds, there are three categories of application and approval cycles for local infrastructure grant and loan programs: continual, fiscal year, and calendar year. These cycles drive the timing of workload "crunches" for agency staff. The prioritization/sequencing of agency grant programs into each of the four roll-out cycles will need to take this into account to ensure an "orderly" transition to the new system.

The members of the GCLM Program Liaison Team are most likely to be impacted by these variances in workload; however, their responsibilities are critical to the "success" of the project with external stakeholders.

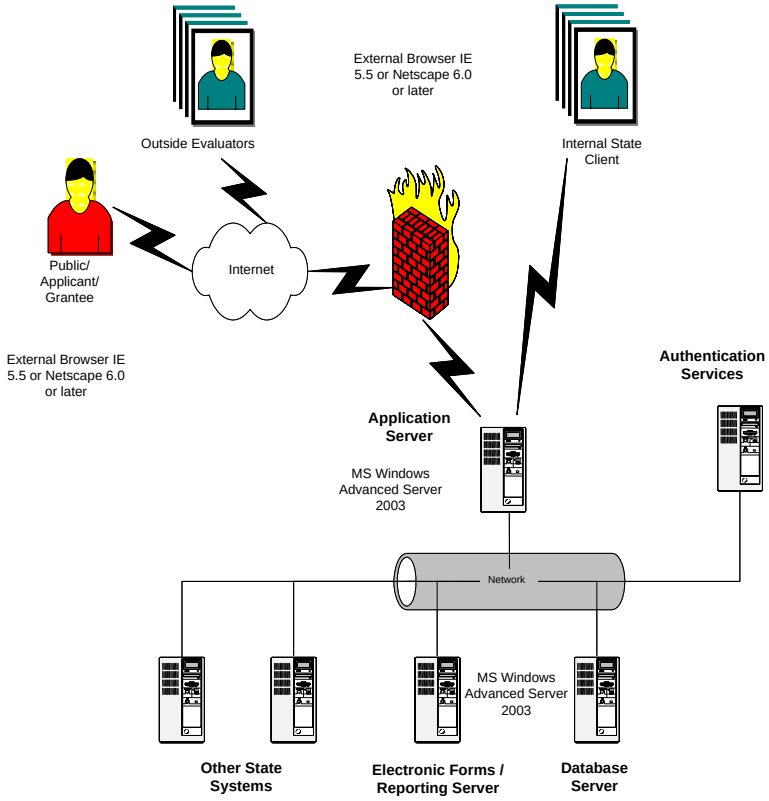
2.6.3. Other Phasing or Dependency Issues

Other phasing or dependency issues that the GCLM project team should consider addressing include:

- Communication and coordination with relevant federal and state grant management efforts including such bodies as:
  - National Grants Partnership (NGP).
  - Inter-agency Electronic Grants Committee (IAEGC).
  - Uniform Guidelines Coalition.
  - The Bureau of Justice Assistance.
  - The Federal Financial Assistance Management Improvement Act of 1999.
- Acceptance by applicants to change. Agencies should consider ways of encouraging use of the new system by applicants, especially if they establish that it is not mandatory for customers.
- Acceptance by recipients to change. Agencies should consider using a phased roll-out to allow recipients to gradually adapt to the new system and processes.
- Acceptance by internal staff to change.

2.7. Hardware and Software Environment

Without the benefit of an identified best of breed package the actual details of the hardware and software environment and needs will inevitably be a sample. We can identify a number of components that one would expect to see in most implementations. The following diagram illustrates those common components of a hardware and software environment.



Users would access the application using standard web browser technology. External users such as the general public, applicants, recipients and external evaluators – and internal users accessing the system outside the State Governmental Network – would access the system using the internet and would navigate the application using web pages. This activity would typically be managed through the DIS Fortress. State agencies who are members of the State Governmental Network will also navigate the application using web pages with access to the application through the State's network.

The application server would host the application logic and service the web requests submitted by users. The database server would typically be a single multi-processor machine on which the

database software operates and provides the database management facilities for the application. Separating the application server from the database provides a smoothing of the processing burden that provides users a more consistent response experience. Similarly, using a separate single processor server to generate all of the electronic forms and standard and ad hoc reports helps response time for those functions.

The number, configuration and functions supported by each server component will be based upon the specific requirements of installation. For example, while the database may be co-located on the application server, this is typically not recommended, as the application server is accessible over the internet. Also, a design best practice would have electronic forms and reporting as separate components that could be run on their own dedicated server.

In most cases the operating software should be Microsoft Advanced Server software. This is widely used and provides all the capabilities necessary to support a robust application. The database software would be one of a number of SQL based products such as Microsoft SQL Server. Other software products and utilities may also be part of the implementation depending upon the requirements of the solution selected. Selection of operating software and database software will need to support OFM architecture and platform standards as specified at the time of implementation.

3. TESTING

3.1. Acceptance Testing

Acceptance testing is meant to demonstrate that the system delivered can successfully perform all of the functions required as documented in the project documents and contractual agreements.

The testing process planned for the Grants, Contracts and Loans Management system (GCLM) will need to address the following:

- Quality and test objectives (**Why** are we testing?)
- Scope of testing (**What** are we testing?)
- Risks, constraints and assumptions (**What** could impede our ability to test?)
- Levels and types of testing to be done (**What** is our approach for testing?)
- Testing techniques and traceability (**What** technique will be followed to determine test scripts?)
- Testing tools (**What** tools will be used to perform the tests? **When** will they be used? **Why** will the tool be used?)
- Defect tracking and reporting process (**How** are we going to manage defects?)
- Test acceptance criteria (**When** is user acceptance testing complete?)
- Test deliverables (**What** test artifacts are we delivering to the client?)
- Test data and traceability (**What** data do we need? **Who** will provide the data? **When** will the data be available?)
- Test environment (**Where** are we testing? **How** many environments are required? **Who** requires the specific environments?)
- Testing support (**What** support do we need and **Who** will provide that support?)
- Test reporting and escalation procedures (**How** and **when** are we going to report our progress to management? **Who** will report?)
- Roles and responsibilities (**Who** is testing? **What** will be tested, **when**?)
- Testing project plan (**When** are we going to test? **When** do we need resources to be available?)

3.1.1. Testing Process Outcomes

The overall testing process will ensure that the following GCLM elements are accounted for as the different testing phases and testing processes are planned, developed, and executed.

Functionality	Outcomes
Function test	Tests focused on validating the target-of-test functions as intended, providing the required service(s), method(s), or use case(s). This test is implemented and executed against different target-of-tests, including units, integrated units, application(s) and systems.
Security test	Tests focused on ensuring the target-of-test data (or systems), is accessible to only those actors intended. This test is implemented and executed for various targets-of-test.
Volume test	Testing focused on verifying the target-of-test ability to handle large amounts of data, either as input and output or resident within the database. Volume testing includes test strategies such as creating queries that will return the entire contents of the database, or have so many restrictions that no data is returned, or data entry of the maximum amount of data in each field.
Usability	**Outcomes**
Usability test	Tests which focus on: • Human factors • Aesthetics • Consistency in the user interface • Online and context-sensitive help • Wizards and agents • User documentation • Training materials
Reliability	**Outcomes**
Stress test	A type of reliability test that focuses on evaluating how the system responds under abnormal conditions. Stresses on the system may include extreme workloads, insufficient memory, unavailable services and hardware, or limited shared resources. These tests are often performed to gain a better understanding of how and in what areas the system will break, so contingency plans and upgrade maintenance can be planned and budgeted in advance.
Performance	**Outcomes**
Load test	A type of performance test used to validate and assess acceptability of the operational limits of a system under varying workloads while the system-under-test remains constant. In some variants, the workload remains constant and the configuration of the system-under-test is varied. Measurements are usually taken based on the workload throughput and in-line transaction response time. Variations in

Functionality	Outcomes
	workload will usually include emulating average and peak workloads that will occur within normal operational tolerances.

3.1.2. Test Objectives

Test objectives describe specific goals that assure the quality of the system. Specifically, the objectives of testing could be to verify that the application functionality and databases:

- Provide the functionality as described in the business requirements or use cases.
- Generate expected results.
- Correctly invoke links to other applications/sites and interface correctly with other systems.
- Process transactions within acceptable performance testing requirements.
- Do not cause abnormal termination within the application and within batch jobs.
- Meet security requirements for logon process and access to data.
- Can handle the anticipated volume of transactions and/or performance specifications.
- Allow third-party software to continue to operate as intended.
- Do not adversely impact nor unintentionally alter internal and external interfaces.

Implementation project team testers will develop complete test cases, test scripts, templates, checklists and recommend the final schedule as part of the acceptance plan. Test cases will be developed from the use cases created during requirements analysis. As the deployment of the application progresses, new test cases and plans will be written to verify quality and ensure the correct functioning of the system. Verification of the completeness and validity/relevance of the test cases will be the responsibility of the participating agencies. The acceptance test items will be identified early in the implementation project.

The test case document describes a set of test inputs, execution conditions, and expected results, identified for to evaluate some particular aspect of a target test item. The test script is a collection of step-by-step instructions that realize a test, enabling its execution. Test scripts may take the form of either documented textual instructions that are executed manually or computer readable instructions that enable automated test execution.

The project plan will identify test cycles by project phase. Each test cycle will involve the execution and evaluation of tests. Acceptance of each executed test item constitutes acceptance of the functionality as meeting the requirement. The test control procedures will be defined in the test plan. Part of the control process will be to establish a tracking mechanism, such as a test log, for test results and error tracking and resolution. More testing information is available in Appendix C.

4. CONVERSION

4.1. Overview

The implementation of the grants, contracts, and loans management system will involve both data migration and data conversion.

Data migration is the process of transferring/transporting data from existing system database/tables to new system database/tables. Data is extracted from the existing systems and imported into the new system. The tools to accomplish this can range from simple (obtaining/running a legacy report and then manually entering the data into the new system) to complex (the creation of custom extract and import programs to transfer the data in an automated way).

Data conversion is the systematic transformation of data using a predefined set of rules. Business process analysis and systems analysis are used to determine the set of data rules to be applied during a data conversion. The goal of analysis is to understand the business rules surrounding the creation, recognition, capture, and retrieval of business data as defined in the legacy system and as implemented in the new system.

Factors that influence the complexity of data migration and data conversion include:

- The number of systems or sources of legacy grant information.
- The technology diversity of systems/sources of legacy grant information.
- The continued existence or retirement of systems with legacy grant information.
- The volume of legacy grant information to be brought into the new system including open and/or closed records, and number of years of legacy data needed in the new system.
- The type of legacy grant information to be brought into the new system, financial or non-financial.
- The character of non-financial information including data, both entity and transactional, and documents.
- Financial grant information which may require both beginning balance records and possibly supporting financial transaction records be brought over into the new system.
- The integrity or quality (existence, accuracy and completeness) of legacy grant information.
- The need to add “relational” data to legacy grant data that may not have existed in old systems.

- The number of times data migration and conversion activities will need to be executed based on the implementation approach.
- The availability of qualified of "qualified" program resources to assist in planning and executing data migration and conversion activities.

A single element from the source data may split into more than one element in the target database (e.g., a sub-grant application address field may not have been properly decomposed in the original spreadsheet/database). Conversely, multiple elements from the source data may be combined into one element in the target system (e.g., the same item could have been stored in several different ways in the existing spreadsheet/database).

4.2. Agency Challenges

As noted in the GCLM Definition of Requirements document, "the data structures of the solution must allow for conversion of current agency sub-grant, contract and loan system and ad hoc database data; and the specific requirements of conversion have not been determined at this time."

Data conversion will be a key implementation challenge for the GCLM project team. CTED will likely face greater challenges than ECY since legacy grant information for CTED is decentralized and contained in numerous, siloed Excel files and Access databases. This will likely necessitate a manual conversion strategy for CTED. For ECY, data migration and conversion will at least be partially automated since it will involve moving data from the existing CGP System to the new GCLM system.

State grant programs maintain extensive historical data. It may not be feasible to convert or maintain all this information in the new enterprise system. As part of the implementation plan, the team will need to research and get ratification on the requirements for historical data. Archiving, converting, maintaining, updating, and accessing historical grants management data for the number of state grant programs that will adopt the new system could become costly without an appropriate and well-thought out strategy.

Program conversion requirements should be looked at by the agencies while they are developing the baseline program documentation during the Agency Preparation Phase. Information about historical data conversion will be required by vendors and implementers bidding on the State's implementation RFP.

The preliminary Conversion Plan covering the enterprise pilot and each of the four roll-out cycles for CTED and ECY should be developed during project initiation as part of the Planning and Scoping activities. The identification of program and agency data to be used in the pilot will need to be confirmed during the Business Blueprint activities. The Conversion Plan for Program Implementation should be finalized no later than the conclusion of the pilot.

Due to the phased roll-out approach, data migration and conversion activities will need to be executed during each implementation roll-out cycle. Since related groups of state grant programs will be converted over to the new system in each roll-out cycle, agency legacy grant systems will need to continue to be in existence for some time and support the activity of non-converted grant programs. Careful planning will be required to manage the transition of ECY grant programs from the CGP system to the new GCLM system.

From the perspective that the data migration and conversion programs will be executed repeatedly for ECY over set intervals, they can be viewed as interfaces that will require a standardized data exchange format.

Besides converting data, each agency program group will need to determine what documents must be brought into the new system. Standard document management activities of scanning, indexing, and cataloguing will need to be executed on these documents. This effort could be extremely labor intensive.

As to financial data that may need to reside in the new system, agency program and fiscal staff will need to verify the balances at the cutover date and determine what other supplementary financial data must be in the system to support these balance records.

More detailed information on data conversion is available in Appendix D.

5. INTERFACES

As noted in the GCLM Definition of Requirements document, the specific interface requirements for the new system include:

- Use Case 22, Send Information to/from AFRS – compile an A/P transaction file and send to AFRS for payment requests and other financial transactions.
- Use Case 23, Make Information available to other systems - The system must make data items available to other applications in a standard format (industry standard XML formats)

Design and development of the AFRS interface would occur during the Conference Room Pilot activities of the System Implementation Phase (see section 9 for additional information on Project Milestones and Phases).

During the Conference Room Pilot activities but sufficiently in advance of the Program Implementation activities on the work plan, the participating agencies will need to determine interface plans for their respective agencies. Within ECY, there are many agency systems that either depend on or send information to the legacy CGP system. ECY will need to devise a plan to ensure this data will continue to move between the new system and remaining agency systems.

Design and development of these agency specific interfaces is out of scope for the GCLM project. As noted in the Agency Staffing model contained in section 11.1, CTED and ECY will be contributing 0.5 of an FTE each for a Technical Specialist to the project. This role is responsible for agency data conversion and for developing agency specific enhancements to the enterprise GCLM system including new forms and reports. It would be advisable for the agencies to allocate the remaining 0.5 FTE of this Technical Specialist role to developing the file format exchange processes that will be needed to send and receive data to and from other agency systems.

6. DOCUMENTATION AND TRAINING

6.1. End-User Training and Documentation

The application will be used by both external (applicants, recipients, funders) and internal (agency, program, fiscal staff, etc.) user groups. An initial assessment of the user community would indicate that there might be a need for up to three different training curriculum covering:

- Front-Office functions
- Back-Office functions
- Administration (Agency & System)

To be effective, training for the Grants, Contracts, and Loans Management system must be relevant to all user groups. That is it must be timely, accurate, tailored, and straight-forward (simple). Timing of training will be dependent on the prioritization/sequencing of programs in the agency implementation roll-out cycles of which each agency has four.

The training of external users on changes to application forms, requirements, and processes (front-office functions) will likely be the responsibility of the agency program units as many of them already perform this service as part of their customer service responsibilities.

External users will need to be trained in advance of the conversion of their programs/grants into the new GCLM processes. For this purpose, there needs to be coordination between the communication plan for which the GCLM Program Liaison Team has primary responsibility and the training plan which will be executed by agency program staff.

As with other enterprise financial systems OFM currently maintains, OFM will provide training to internal, or agency, users on the baseline or “enterprise” system functionality. Training on agency specific functionality (forms, reports, workflows, etc.) to internal users would be the responsibility of the agencies and would most likely be carried out by the project Business Leads from each agency.

Using one of several approaches, internal users can be separated into three groups: (1) administrators, (2) power users, and (3) basic users. Basic users might just need to know how to search for information in the new system and how to run reports, whereas power users will need to know how to create operational transactions in the new system.

Effective training will ensure that:

- Users are trained to an appropriate level so that they understand the what, why and how of the new system.
- User productivity is maximized and the new system is accepted.
- Users feel that they have sufficient knowledge and skills to perform their jobs effectively following the implementation.

6.2. OFM Support Documentation

OFM will develop support documentation from the vendor-delivered documentation for the application. As documented in the Definition of Requirements, required vendor documentation includes comprehensive on-line help, operational, technical and installation documentation. As part of implementation services, some vendors will customize delivered documentation for a particular client installation.

OFM will maintain any State customized support documentation. Software support documentation will be provided by the vendor as part of the contracting agreement and software upgrade process.

7. CUTOVER SUPPORT

7.1. OFM Deployment Planning

7.1.1. Planning

In order to ensure a successful deployment of the application a significant amount of planning is required. It isn't just a matter of making the application available now that it's tested and data converted. All of these activities occurred in the test environment and with the project team. Deploying the application to the larger audience of agency users, running in the production environment and replacing previous system use, requires planning, communication and coordination. Deployment planning can and should begin long before the planned deployment.

The first question that needs to be addressed is how to deploy to the users, i.e., big-bang, phased, progressive, etc. This question brings into discussion the agencies' capabilities to support deployment from a resourcing and scheduling perspective. This deployment will have to respect constraints from various agencies and entities and develop a strategy to work within them to assure success. With multiple agencies involved, it appears unlikely that a "big-bang" deployment would be appropriate. Clearly, the best approach will be dictated by the realities of those involved.

7.1.2. Technical Issues

Prior to testing, the Implementation Project Team (see section 2.4) will need to begin the planning process. Consideration must be given to technical issues and how to manage them. This will require the involvement and support of the data center specialists whose job it is to manage the production hardware, software and network. They will have experience in the migration of applications from test to production that must be solicited and incorporated into the deployment plan. This also changes the coordination dynamics from the test phase as the data center may have scheduling and resource constraints that must be accommodated.

7.1.3. User Preparation

Consideration must also be given to the impact of deployment on the broader user community in the agencies. They may not have been involved in the test phase and much of this will be new to them. Training may be their first opportunity to really understand the nature of the new application and what impacts it may have on their processes. These impacts need to be understood by the Implementation team and managed. Failure to adequately anticipate the user

program and agency impacts will multiply the amount of effort required post-deployment to react to these issues.

Communication is an essential element for a successful deployment. Once the Implementation team has identified the various activities that are needed, the individuals responsible and the scheduling of them, a deployment communications plan is necessary. The various stakeholder groups must be identified and the nature of their interest described. This provides the basis to understand who needs to be communicated with and what they need to hear. The OFM Project Manager must be charged with the responsibility to execute the deployment communication plan.

7.1.4. Operational Preparation

To prepare operational staff:

- Bring support teams on side – ensure the teams that will be supporting the application's server and client components are involved in advance of the production release. The OFM and vendor operations teams will be from different organizations. Bear in mind that operations teams frequently perceive that new applications are dropped on them with little or no warning, and without regard for the existing environment. Make every effort to bring production operations on side as early as possible.
- Liaise with operations teams – ensure that the operations team understands the application's configuration and issues.
- Develop Operational documents **–** work with the OFM production operations team to transform the project's internal policies and procedures into full operational documents that will allow the operations team to manage the application and its assets.
- Document the following for the production environment:
  - Final production server configuration
  - Final production client configuration(s)
  - Automated deployment tools available
  - Backup tools in use
  - System performance and health monitoring tools
  - Security requirements
  - Change windows
  - Existing policies or procedures for systems operations, including:
  - Operations and Process documentation
  - Configuration and asset management
  - Backup and redundancy plans

- Change request management
- Release management
- Capacity management
- IT Continuity management.

7.1.5. Deployment Checklist

As all of the deployment activities are identified and discussed, a deployment checklist should be developed to clearly articulate the order and responsibility of execution. This checklist will evolve during the planning discussions but eventually must become the authoritative focal point of deployment. If it's not on the list it doesn't get done.

7.1.6. Deployment Risks

When the deployment checklist is completed, the question of "what will go wrong?" needs to be asked. The deployment plan must anticipate problems, how to respond to those problems, how to get back on track and how to revert to plan "B". Careful analysis of the deployment activities by all participants will be the first step to identifying fall back plans. Spending adequate time on this activity will greatly increase the overall confidence in the deployment plan.

7.2. Agency Support

During the deployment phase, agencies need to understand their roles and responsibilities. These should be clearly documented in the deployment plan and agency representatives should have participated in their development. A critical element of agency involvement is that the individual selected to participate in the deployment planning activities has a broad understanding of the agency's needs, and also conducts follow-up meetings with other agency staff to discuss the various topics and issues that arise in the deployment planning meetings.

Agencies must assume responsibility for managing the impact of this change to their business environment. The project team will address the issue of delivering an application that is fit for its intended use. Agencies need to make the necessary adjustments in their divisions and departments to ensure successful integration of the new application. This includes:

- Planning for changes to or the phasing out of current applications.
- Developing and deploying needed application interfaces.
- Supporting staff in their need for training.
- Initiating discussions anticipating the changes that are coming.
- Assisting staff with implementing decisions made regarding the changes.

8. ONGOING SUPPORT

8.1. Release Management

As described in section 2.3 Project Change Control, changes are inevitable in a project or application environment. Whether from internal sources such as application enhancements, external sources such as policy and legislative changes or new feature and enhancements from the vendor, they must be managed. Insuring that change is not a disruptive force in a project is the domain of Change Management.

One of the outcomes of Change Management is the approval of work to be done to the application. Over a period of time a group of these approved changes must be implemented into the production environment. Once changes are developed, tested, and packaged into releases for deployment, release management is responsible for introducing these changes and managing their release.

The goals and objectives of Release Management are to:

- Plan releases in line with requirements resulting from approved changes.
- Build effective release packages for the deployment of one or many changes into production.
- Test release mechanisms to ensure minimum disruption to the production environment.
- Review preparation for the release to ensure maximum successful deployments.
- Deploy the release in line with implementation guidelines

It would be the responsibility of OFM to ensure the Release Management process is defined and implemented, along the principles outlined above. The Agency Advisory Group, with guidance from the Governance Committee (both described in section 2.4), would have the responsibility of reviewing, approving and prioritizing changes to the application. The ongoing support team would be assigned to work on the approved changes and complete that work through user acceptance testing. At that point, the tested changes would be subject to the Release Management process to ensure successful implementation into the production environment.

From a resourcing perspective, OFM would need to assign someone the responsibility for Release Management. Although this would not be a full-time job for the Grants, Contracts and Loans system, it typically is a full-time responsibility for an individual or group. This activity needs to have someone's full attention in order to ensure the process and pipeline of changes are managed appropriately across all agencies.

Whether a new vendor release of functions and features is being implemented, or a group of approved changes, the Release Management function must be in place to ensure appropriate procedures are followed when implementing changes into production. This process will reduce deployment issues and minimize support requirements post-implementation.

8.2. Vendor Liaison

The implementation of an enterprise grants, contracts and loans system may entail the use of software products from a number of sources. All of these software products would work in conjunction with each other to support the overall business objective. This could include operating system software, web, database and application server software, possibly special security and administration tools, embedded utilities within the application and the application itself.

The management of vendors for some of this software may fall to the technical team depending upon how it fits in the overall infrastructure. The application and its supporting components would fall to the business side for management.

Overall responsibility for vendor liaison will reside with OFM. All contracts, agreements, change order and work orders will be executed by OFM. This provides a single point of contact for the vendor and simplifies the critical communications surrounding contractual terms. OFM will have a working responsibility to coordinate and communicate contractual information to the other stakeholders and will act on their behalf, with the guidance of the Governance Committee.

8.3. Vendor Service Level Commitments

In order to manage the vendor relationship it is necessary to document all of the terms, conditions and expectations that exist between the parties. This will range from expectations regarding status reporting during the implementation project to on-call support following deployment. On the vendor side, all of these descriptions must be in a contractual vehicle. Typically the agreements involved may include the contract, statement of work, software license, maintenance/warranty agreement and services agreements. Since agencies have entered into these agreements in the past we will not delve any further into them.

An area that requires special attention is the operation of the vendor service desk. The hours of operation, call response expectations, incident response expectations, tracking and escalation procedures, consequences of service failures and definition of terms must be clearly documented. The service desk will be OFM's primary support tool to keep the application operational and provide assistance to agencies – who in turn provide assistance to external users – when needed.

Other considerations are contractual definitions. Unless terms are clearly understood, agreed to and documented, the opportunity for unproductive discussions and debates is limitless, with the unfortunate outcome of impacting users. The services that are included must be clearly defined as well as the definitions of errors and issues. What is a critical error? What response should be given to a non-critical error? What if the error cannot be recreated? All of these questions must be addressed in clear, well understood terms.

8.4. Agency Service Level Agreements

Since OFM is the owner of the vendor relationship, they, in turn, act as the single point of contact for participating agencies. This will involve keeping agencies informed of vendor plans and activities, project and support plans and how those plans may affect agencies. It also means that OFM may act as the second level support for users of the application.

First level support would be an agency individual that has been tasked with the responsibility to assist and support agency staff in the use of the application. Second level support could be an OFM individual that is responsible to support the agency specialists. Third level support would come from the vendor and would typically be managed by the second level support desk.

All of these responsibilities and expectations need to be documented. A service level agreement between OFM and each participating agency will capture the critical terms of reference for that relationship. Service level agreements are pseudo-contract documents that specify the exact understanding between the parties. Typical service level agreements contain the following information:

- Parties to the Agreement – Clear identification of the entities making this agreement and the individuals responsible for it.
- Description of Service – A full description of the key business functions, deliverables and other information to describe the service, its scale and priority for the business.
- Service Hours – The physical hours that the system will be available, e.g., 8:00-18:00 Monday to Friday, or 7 x 24 x 365. This will also detail any pre-agreed maintenance activities and their impact on service hours.
- Service Availability – Specifies the target level that the application will be available for the users, typically expressed as a percentage, e.g., 95%.
- Reliability- The maximum number of service breaks that can be tolerated within an agreed period, e.g., 2 per month. This also needs to describe what is a service “break”.
- Customer Support – Describes how to contact the OFM Service Desk, the hours of availability, off-hours support assistance. It may also include call answer targets, response times, target resolution times and other metrics.
- Issue Management – Describes how issues regarding service will normally be handled.

- Escalation – describes the process for escalating an issue that cannot be resolved through normal issue handling.
- Service Performance – Details of the expected responsiveness of the service, e.g., workstation response times, thresholds, etc.
- Change Management Procedures – Overview of the application Change Management procedures that must be followed.
- IT Service Continuity – Brief description of the agencies' IT Service Continuity Plans and specific responsibilities of both sides, e.g., data back-up, off-site storage.
- Security – Brief description of the agencies' Security Policies and specific responsibilities, e.g., passwords, security violations, unauthorized software use, viruses, etc.
- Charging – Details of any charging formulas, invoicing, payment considerations.
- Service Reviews – Details of how and when service targets will be reviewed, reporting of the results, formal review meeting, participants, etc.
- Data Sharing Agreement – Details of data to be shared.
- Glossary – Explanation of abbreviations and terminology to assist in understanding the Agreement.

Each agency using the application should have a Service Level Agreement executed with OFM. Most agencies will sign a standard form of the agreement that is designed to address most needs. Some agencies may require additional terms and conditions that need to be documented as part of the agreement. In any case, well documented agreements between OFM and the agencies will provide a solid framework to manage the relationship going forward.

9. REFINED COST ESTIMATES

Based on the requirements and the assumptions listed in the Business Case document and the additional information presented in this Work Plan, the projected costs of implementing a Best-of-Breed solution are between $3.30 million and $3.86 million.

There has been an increase in projected cost of implementing a Best-of-Breed solution based on the following:

- Including five (5) months of Agency Preparation activities for establishing an enterprise governance structure, issuing the RFP, and developing a baseline of grant program documentation
- Expanding the implementation schedule from twelve to seventeen (17) months

Five-year cost of ownership is unchanged and estimated at $1.65 million to $2.5 million, plus hardware maintenance costs. These estimates are explained further in the Business Case document and below.

Revised assumptions for the cost estimates for the implementation of a COTS Best-of-Breed solution include:

- The GCLM project will include a five (5) month Agency Preparation phase followed by a seventeen (17) month solution implementation phase.
- Agencies will perform the Agency Preparation activities without the need to hire external consultants.
- Vendor/Contractor Implementation Costs include application enterprise licensing and the services of the vendor/contractor implementation team.
- The vendor/contractor implementation resource roles include Project Manager, Business Analysts, Technical Lead, Technical Architect, Application and Technical Specialists (Develop customizations, interfaces, conversion and reports).
- A blended rate of $125 per hour was used for vendor/contractor implementation resources.
- Hardware costs include 3 servers; software costs include Microsoft IIS Web Server and Microsoft SQL Server. These estimates do not reflect any discount the state may be able to take advantage of.
- Annual software maintenance fee is based on the license fee for the installed components.
- Annual Vendor/Contractor Support is an estimate of the amount of time that OFM may require from the vendor in support of enhancements and upgrades.
- Implementation costs (OFM + Agencies' Cost) include project management, product management, agency business leads, technical specialists, testers, data administration,

network support and external quality assurance. Costs for these are taken from OFM's supplemental budget request dated 1/10/2006.

- CTED and ECY will each contribute qualified resources to staff roles for product manager, business lead, tester, and technical specialist (responsible for developing conversion, interface, customizations, and reports).
- For the Agency Preparation Phase, a total of 3.5 FTE's will be contributed for five (5) months by the agencies to cover the following roles: Project Manager – OFM (1.0 FTE), Product Manager – OFM (0.5 FTE), Business Lead – CTED (1.0 FTE), and Business Lead – ECY (1.0 FTE).
- For the Implementation Phase of seventeen months, both CTED and ECY will each contribute qualified resources totaling 2.25 FTE's to fill the following roles: Business Lead (1.0 FTE), Technical Specialist (0.5 FTE), and Tester (0.75 FTE).
- For the Implementation Phase of seventeen months, OFM will contribute qualified resources totaling 4.35 FTE's to fill the following roles: Project Manager (1.0 FTE), Product Manager (1.0 FTE), Test Lead (1.0 FTE), Technical Specialist (1.0 FTE), Database Administrator/Infrastructure Support (0.25 FTE), and Infrastructure Support (0.10 FTE).
- For the Implementation Phase of seventeen months, contractor resources are estimated at 4.5 FTE's and include a Project Manager, Functional Lead, Technical Lead, Technical Architect, and Technical Specialists. (See section 11 for further information on project staffing levels).

Based on the fit to requirements and assumptions above, the projected costs of implementing a COTS Best-of-Breed solution are listed below.

Best-of-Breed—Cost Estimates ***Component [Object]***	***Low Range***	***High Range***
Vendor/Contractor Implementation Costs [CA, EL]	$1,900,000	$2,400,000
Agency Preparation (OFM+Agencies' Cost) : Salaries [A]	$ 100,000	$ 100,000
Agency Preparation (OFM+Agencies' Cost) : Benefits [B]	$ 33,000	$ 33,000
Implementation (OFM+Agencies' Cost) : Salaries [A]	$860,000#@	$860,000#@
Implementation (OFM+Agencies' Cost) : Benefits [B]	$285,000#@	$285,000#@
Hardware/Software [JC]	$120,000	$180,000
Training (OFM Cost) Salaries and benefits [A,B]	@	@
Capital Investment (rounded up to 10,000)	**$3,300,000**	**$3,860,000**
Annual Software Support (OFM Staffing Cost) [A,B]	$200,000#	$270,000#
Annual Hardware Maintenance [EE]	TBD (OFM)	TBD (OFM)

Best-of-Breed—Cost Estimates *Component [Object]*	*Low Range*	*High Range*
Annual Software Maintenance [EE]	$50,000	$80,000
Annual Vendor/Contractor Support [CA, EL]	$80,000	$150,000
Five Year Cost of Ownership (rounded up to 10,000)	**$1,650,000 + TBD**	**$2,500,000 + TBD**

Twelve (12) month figures taken from OFM Supplemental Budget Request 1/10/2006 and extrapolated for a seventeen (17) month project implementation schedule.

@ Training costs are included in the implementation costs for OFM and Agencies as these responsibilities will be conducted by the OFM Product Manager and the Agency Business Leads.

10. PROJECT PHASES AND MILESTONES

10.1. Agency Preparation

The proposed structure for the implementing the grants, contracts, and loans management system includes a precursor phase for the agencies prior to the engagement of a vendor/implementation team. This "Agency Preparation" stage can start well prior to implementation. It is meant to improve the efficiency of the Planning and Scoping activities resulting in a quicker implementation of a system Pilot.

The major objectives of the Agency Preparation stage are to:

- Establish an enterprise governance model and structure for the project.
- More thoroughly catalogue the CTED and ECY program processes.

As noted previously, there is no comprehensive program inventory or catalogue for CTED and ECY programs. Although the Berk & Associates study and JLARC study mentioned in Section 1.4 Sources of this report provide some relevant information, they were not geared toward investigating the program processes. Collecting samples of program documents (applications, reports, etc.), surveying programs for workflows associated with Find, Award, Post-Award, and Close-Out processes will provide a jump start to subsequent Planning and Scoping efforts.

10.2. Planning and Scoping

The project objectives will be most clearly defined following the completion of the Planning and Scoping activities. Subsequent activities are expected to be completed in at least two stages. There are three stages to the initial implementation for the partnering agencies:

- Planning and Scoping
- Conference Room Pilot
- Program Implementation

The major activities of the Planning and Scoping stage include: Project Initiation, Base System Installation, and Business Blueprinting.

10.2.1. Project Initiation and Base System Installation

One of the primary purposes of the Project Initiation phase is to assemble the project team and formalize the terms of reference for the project including business objectives, project scope, success criteria, implementation approach, and change readiness. Key activities include:

- Confirm scope and objectives with management and stakeholders.
- Hold project team kick-off meeting to orient the team.
- Finalize project plan and estimates.

It is during this phase that the majority of the "leg work" will be done with respect to confirming the business process priorities, researching existing agency and Roadmap studies and documentation, documenting current program processes, and identifying issues and opportunities. The technical team will be busy with installing and configuring servers and other needed hardware and vendor software on-site.

10.2.2. Business Blueprinting

"Business Blueprint" activities provide a means for key program representatives and, as feasible, external stakeholders (applicants, recipients, funders), to come together, review the specific program processes, work to harmonize these processes, and then validate what is common for these processes. A series of process workshops will be held for each agency organized around reviewing "Front-Office" and "Back-Office" processes for GCLM.

Front-office functions involve interactions with external stakeholders and are defined relative to the "customer's view". Examples of front-office functions include find/search for grant, register for program, apply for grant, report progress, etc. Back-office functions are internal business processes and include establish program, solicit applicants, select recipients, process application, award grant, monitor program, pay recipients, project reporting, etc.

A high level data model for each of the business processes will be developed. This will be a diagram showing the relationship of major data grouping or tables related to the business process. In addition, the team will develop a narrative describing any common data standards necessary to support the common processes. Other outputs from this stage include the finalized program inventory and Program Process Maps for each agency.

10.3. Conference Room Pilot

The primary objective of Conference Room Pilot activities is to provide a "proof of concept" by implementing a base version of the system configured to meet the common or enterprise perspective of the GCLM business processes.

The major activities of the Conference Room Pilot stage include:

- Fit/gap analysis for front and back office functions.
- Configuration, testing and implementation of the pilot.
- Development and testing of the AFRS interface.
- Development of baseline user documentation and training material.

The fit/gap analysis sessions with agency staff and program representatives are intended to:

- Produce configuration and customization assessments.
- Identify requirements for new processes if necessary.
- Formalize data, report, interface and conversion requirements for each agency program.
- Finalize the program prioritization/sequencing for roll-out.

The Conference Room Pilot will result in a "sandbox" environment being available to key internal stakeholders to "play" and interact with the initial enterprise version of the grants, contracts, and loans management application.

As noted in Section 5, during the Conference Room Pilot activities but sufficiently in advance of the Program Implementation activities on the work plan, the participating agencies will need to determine interface plans for their respective agencies. As with ECY, there are many agency systems that either depend on or send information to the legacy CGP system. ECY will need to devise a plan for ensuring that this data will continue to move between the new system and remaining agency systems.

Design and development of these agency specific interfaces is out of scope for the GCLM project. As noted in the Agency Staffing model contained in section 11.1, CTED and ECY will each be contributing 0.5 of an FTE for a Technical Specialist to the project. This role is responsible for agency data conversion and for developing agency specific enhancements to the enterprise GCLM system including new forms and reports. It would be advisable for the agencies to allocate the remaining 0.5 FTE of this Technical Specialist role to developing the file format exchange processes that will be needed to send and receive data to and from other agency systems.

10.4. Program Implementation

The goal of the Program Implementation stage is to roll-out the base, enterprise version of the grants, contracts, and loans management system to the various programs in each agency (CTED,

ECY) using a logical approach that will not overtax agency resources or cause massive confusion among external stakeholders. To that end, the roll-out for each agency has been divided into four cycles, with each roll-out cycle lasting approximately three months. The agency roll-outs will occur in parallel as two streams of effort of separate but related efforts.

The prioritization/sequencing of the various agency programs into one of the four agency roll-out cycles will be finalized during the Conference Room Pilot stage so that program representatives have a chance to gauge the fit/gap of the enterprise version to their current processes.

Each roll-out cycle is like a "mini" project and includes scoping and planning, design, build, test, implement and training activities. The design, build and test activities are meant to allow program specific enhancements (forms, reports, workflows, etc.) to be implemented to the enterprise/base version of the application.

A major component of each roll-out cycle is communication and training, both for internal and external users. Applicants and recipients will need sufficient lead time to adapt to the new program processes.

During the program implementation cycle roll-outs, the agencies will need to develop the file format exchange processes that will be needed to send and receive data to and from other agency systems.

10.5. Milestones

The following table identifies major milestones from the work plan presented in Section 11 of this report.

Milestone Description	Date
Agency Preparation	
Establish Enterprise GCLM Governance Model & Structure	9/6/2006
Execute contract with ASV for GCLM RFP	8/22/2006
Preliminary Program Inventory & Catalogue	9/6/2006
Planning and Scoping	
Project Charter & Preliminary Project Plans	9/27/2006
Base System Installation	10/11/2006
Program Inventory & Catalogue Finalized	10/25/2006
Agency Program Process Mapping for CTED & ECY	10/25/2006
Conference Room Pilot	
Design Specification for Conference Room Pilot	11/22/2006

Milestone Description	Date
Revised Conversion Plan	11/22/2006
Revised Test Plan	11/22/2006
Enterprise (Baseline) Training Material Developed	1/30/2007
Conference Room Pilot Implemented	2/6/2007
AFRS Interface Tested	2/6/2007
Revised Project Plan	2/14/2007
Agency Implementation Decision Point – Go/No Go	2/14/2007
Program Implementation	
ECY Roll-out 1 Completed	5/9/2007
ECY Roll-out 2 Completed	8/3/2007
ECY Roll-out 3 Completed	10/29/2007
ECY Roll-out 4 Completed	1/25/2008
CTED Roll-out 1 Completed	5/9/2007
CTED Roll-out 2 Completed	8/3/2007
CTED Roll-out 3 Completed	10/29/2007
CTED Roll-out 4 Completed	1/25/2008
Phase 1 Sign-off	2/8/2008

11. IMPLEMENTATION STAFFING AND PROJECT ROLES

The Grants, Contracts, and Loans Management System Implementation project requires a team capable of quickly and smoothly integrating with the agencies' program resources to ensure the project timeline is maintained through effective planning, tracking, coordination, and communication.

The project duration, including five months of Agency Preparation, is estimated to be twenty-two (22) months with the start date for the Agency Preparation Phase being in mid April, 4/17/2006, and the start date for the subsequent System Implementation Phase being just after Labor Day in September 2006, 9/7/2006. The project end date is estimated to be at the end of January 2008.

11.1. Agency Staffing and Roles

11.1.1. Staffing

The following table identifies the staffing commitment for agency resources for both the Agency Preparation Phase and System Implementation Phase of the state-wide Grants, Contracts, and Loans Management Implementation project.

Agency Resources	Quantity	Duration (Months)	Percent Utilization (%)	FTE Equivalent	Man Months	Avg Hrs / Month	Total Hrs
Agency Preparation Phase							
Project Manager - OFM	1	5	100%	1.00	5.00	160	800
Product Manager - OFM	1	5	50%	0.50	2.50	160	400
Business Lead - CTED	1	5	100%	1.00	5.00	160	800
Business Lead - ECY	1	5	100%	1.00	5.00	160	800
Totals for Agency Preparation Phase				***3.50***	***17.50***		***2,800.00***
System Implementation Phase							
Project Manager - OFM	1	17	100%	1.00	17.00	160	2,720
Product Manager - OFM	1	17	100%	1.00	17.00	160	2,720
Test Lead - OFM	1	17	100%	1.00	17.00	160	2,720
Tech Specialist - OFM	1	17	100%	1.00	17.00	160	2,720
DBA - OFM	1	17	25%	0.25	4.25	160	680
Infrastructure Support - OFM	1	17	10%	0.10	1.70	160	272
Total for OFM				***4.35***	***73.95***		***11,832.00***
Business Lead - CTED	1	17	100%	1.00	17.00	160	2,720
Tech Specialist - CTED	1	17	50%	0.50	8.50	160	1,360
Tester - CTED	1	17	75%	0.75	12.75	160	2,040
Total for CTED				***2.25***	***38.25***		***6,120.00***
Business Lead - ECY	1	17	100%	1.00	17.00	160	2,720
Tech Specialist - ECY	1	17	50%	0.50	8.50	160	1,360
Tester - ECY	1	17	75%	0.75	12.75	160	2,040
Total for ECY				***2.25***	***38.25***		***6,120.00***
Totals for System Implementation Phase	***12***			***8.85***	***150.45***		***24,072.00***
Totals for Project					***167.95***		***26,872.00***

It is anticipated that OFM, CTED and ECY will each contribute qualified resources to staff project roles for project manager, product manager, business lead, test lead, database administrator, infrastructure support, technical specialist, and tester.

OFM will commit a full-time *project manager* to manage the GCLM Implementation project, a full-time *test lead* to manage testing activities, a full-time *technical specialist* to develop reports, forms, interfaces, and conversion for OFM GCLM and enterprise processes, a part-time (minimum 50% for project duration) *DBA* , and a part-time *infrastructure support* resource.

Agencies will commit appropriate *business/program specialists* to the project, the equivalent of a total of 2.0 FTE's (i.e., one each for CTED and ECY), in the Business Lead capacity to provide business process expertise for agency programs and agency GCLM process areas impacted by the implementation including find, award, post-award, close-out and reporting processes. These resources will participate in requirements workshops, application configuration, report development, data conversion, and user acceptance testing activities. The agency business lead

role will participate in both the Agency Preparation Phase and the System Implementation Phase, whereas other agency project resources will participate only in the System Implementation Phase.

Agencies will commit appropriate *technical specialists* to the project, the equivalent of a total of 1.5 FTE's (i.e., 1.0 FTE from OFM and 0.5 FTE each for CTED and ECY), to provide technical assistance to the project team. These resources will participate in application configuration, customization, interface, conversion, report development, and appropriate testing activities.

Agencies will commit appropriate *business/program specialists* to the project, the equivalent of 1.5 FTE's (i.e., 0.75 each for CTED and ECY), to develop and document test cases, test scripts and test data and to execute test scripts for the enterprise pilot and program enhancements.

Responsibilities for these roles can be found in the following section.

11.1.2. Roles

The following table identifies roles that will need to be staffed by qualified agency resources from OFM, CTED, and ECY for the implementation of a state-wide Grants, Contracts, and Loans Management system.

Role	Agency	Responsibility
Project Manager	OFM	• Maintain authority over, and responsibility for, the entire project team • Coordinate project scope, schedule, costs, and quality with external Project Manager • Monitor issues and action items to ensure timely resolution • Review and monitor change requests • Review project deliverables to ensure they meet objectives and quality standards • Coordinate responsibilities, accountabilities and authority with Consultant Project Manager • Report project progress to the Project Steering Committee • Maintain relationship with Vendor and other Consultant resources
Product Manager	OFM	• Oversee RFP evaluation and agency inventory during Agency Preparation Phase • Review and manage enterprise requirements • Guide and manage development of enterprise processes

Role	Agency	Responsibility
		• Act as agency (OFM) system administrator • Review and manage agency business requirements; guide and manage development of program enhancements • Manage agency change requests • Own and market application to other agencies • Provide agency support/helpdesk • Train the trainers for agencies
Test Lead	OFM	• Manage test team • Develop and manage test plan • Develop test cases, test scripts, templates, and test data • Review results and Execute test scripts during User Acceptance Testing
Database Administrator	OFM	• Maintain the project database environments (Development, Test, Training, Production) • Manage system deployments
Technical Specialist – Developer	OFM	• Provide Web development/portal assistance • Develop program reports • Develop program forms • Develop program conversion processes • Implement program enhancements • Develop AFRS interface • Support Agency (CTED & ECY) technical specialist during Program Implementation cycles
Infrastructure Support	OFM	• Install project hardware • Install project software • Maintain project technology infrastructure
Business Lead	CTED, ECY	• Develop Program Inventory and baseline documentation • Work with OFM Product Manager and Agency BA's and program staff to analyze business requirements and produce functional designs • Review and manage agency business requirements; guide and manage development of program enhancements • Act as agency system administrator

Role	Agency	Responsibility
		• Provide agency support/helpdesk • Train agency staff • Market application to other agencies • Manage agency change requests Design program enhancements • Design Agency reports • Work with application specialist to configure pilot and program enhancements • Support the technical team in unit, integration, system and interface testing • Review and update of process documentation
Technical Specialist - Developer	CTED, ECY	• Develop program reports • Develop program forms • Develop program conversion processes • Implement program enhancements
Tester	OFM, CTED, ECY	• Develop test cases, test scripts, templates, and test data • Execute test scripts during User Acceptance Testing

11.2. External Staffing

11.2.1. Staffing

The following table identifies the staffing commitment for external resources for the System Implementation Phase of the state-wide Grants, Contracts, and Loans Management Implementation project.

External Resources	Quantity	Duration (Months)	Percent Utilization (%)	FTE Equivalent	Man Months	Avg Hrs / Month	Total Hrs
System Implementation Phase							
Project Manager	1	17	100%	1.00	17.00	160	2,720
Functional Lead	1	17	100%	1.00	17.00	160	2,720
Tech Lead	1	17	100%	1.00	17.00	160	2,720
Tech Architect	1	17	50%	0.50	8.50	160	1,360
Tech Specialist	1	17	100%	1.00	17.00	160	2,720
	5			**4.50**	**76.50**		**12,240**

Based on the high-level implementation plan presented in this report, it is assumed that the agencies will contract for up to 4.50 FTE's from external sources – implementation consultants and vendor consultants. External resources will provide project manager, functional lead, technical lead, technical architecture, and technical specialist roles on the project.

External resources are not anticipated to participate in the Agency Preparation Phase, but will participate in the seventeen (17) month long System Implementation Phase.

11.2.2. Roles

The following table identifies responsibilities for project roles staffed by external resources for the implementation of a state-wide Grants, Contracts, and Loans Management system.

Role	Major Responsibilities
Project Manager	• Maintain authority over, and responsibility for, the Consultant project team • Develop and manage the project plan (milestones, tasks, resources, dependencies and schedule) • Manage the project scope, schedule, costs and quality • Monitor issues and action items to ensure timely resolution • Review and monitors change requests • Review project deliverables to ensure they meet objectives and quality standards • Coordinate responsibilities, accountabilities and authority with OFM Project Manager • Report project progress to the OFM Project Manager • Coordinate project scheduling, reporting, and coordination of work and deliverables with OFM Project Manager
Functional Lead / Business Analyst	• Review project deliverables for acceptance • Oversee application installation • Oversee Conference Room Pilot and Program Implementation stages • Oversee and participate on the application and business process teams • Organize and conduct business requirements workshops • Organize and conduct reporting, interface, and conversion workshops • Organize and coordinate the system and performance tests • Work with OFM Product Manager and Agency BA's and program staff to analyze business requirements and produce functional designs • Work with application specialist to configure application • Support the technical team in unit, integration, system and interface testing • Coordinate review and update of process documentation

Role	Major Responsibilities
	• Support the client user team during acceptance testing
Technical Lead / Architect	• Oversee the design and development of the infrastructure and determine overall technical approach • Analyze the functional design and produce the technical design • Escalate architecture issues to the project manager • Support system and performance testing • Manage interface and conversion development, design and testing
Technical Specialist - Application Specialist Technical Specialist - Graphic Artist / UI Designer Technical Specialist - Developer	• Configure GCLM application modules • Develop application customizations • Support the technical team in unit, integration, system and interface testing • Develop UI mockups • Develop system interfaces • Develop conversion scripts • Develop system reports • Support the technical team in unit, integration, system and interface testing

12. PHASE 1 HIGH LEVEL WORK PLAN

A high-level MS Project Work Plan for implementing a Best-of-Breed Grants, Contracts and Loans Management System is attached as Appendix B.

13. ASSUMPTIONS

In addition to the assumptions in previous project documents, the following assumptions have been made during the development of this document:

1. There will be broad participation by state agencies awarding grants regardless of the current state of their legacy systems.
2. An enterprise governance and support structure will be put in place for the Grants, Contracts, and Loans Management System prior to start of the System Implementation Phase of the project.
3. A comprehensive Program Inventory and Catalogue can be created for OFM, CTED, and ECY before implementation begins.
4. The implementation and roll-out schedule will be updated after the Program Inventory and Catalogue are complete, as well as after other project milestones.
5. Legacy grant systems will be linked with the new GCLM system and will continue to be used for a period of time until specific appropriation has been approved for their migration.
6. There will be limited consolidation of grant forms. Because of the diverse nature of many grant programs and due to statutory and regulatory issues, there will be limited consolidation of grant forms.
7. For a statewide system, OFM as the host agency will have primary data management responsibility for backup and recovery, archival and destruction of data stored in the GCLM system. Other participating agencies will have secondary responsibility for the data provided to or used by the GCLM system.
8. Each participating agency will have responsibility for security; however, OFM will have the primary responsibility for maintaining adequate security and authentication processes.
9. The enterprise reporting and AFRS support staff, the enterprise reporting staff, and other groups at OFM affected by the implementation of an enterprise GCLM system, will participate in implementation activities as appropriate. Their time has not been included in cost estimates.
10. Costing assumptions are described in section 8 Refined Cost Estimates.
11. The GCLM project will include a five (5) month Agency Preparation phase followed by a seventeen (17) month solution implementation phase.
12. OFM, CTED and ECY will each contribute qualified resources to staff project roles for product manager, business lead, tester, and technical specialist. The agency business lead role will participate in both the Agency Preparation Phase and the System Implementation

Phase; whereas other agency project resources will participate only in the System Implementation Phase.

13. Agency resources on the project will complete their project tasks in accordance with the approved project plan.
14. Agencies will perform the Agency Preparation activities without the need to hire external consultants.
15. CTED and ECY will each contribute qualified resources to staff roles for product manager, business lead, tester, and technical specialist (responsible for developing conversion, interface, customizations, and reports).
16. OFM will commit a full-time *project manager* to manage the GCLM Implementation project, a full-time test lead to manage testing activities, a full-time technical specialist to develop reports, forms, interfaces, and conversion for OFM GCLM and enterprise processes, a part-time (minimum 50% for project duration) DBA , and a part-time infrastructure support resource.
17. Agencies will commit appropriate business/program specialists to the project, the equivalent of a total of 2.0 FTE's (i.e., one each for CTED and ECY), in the business lead capacity to provide business process expertise for agency programs and agency GCLM process areas impacted by the implementation including find, award, post-award, close-out and reporting processes. These resources will participate in requirements workshops, application configuration, report development, data conversion, and user acceptance testing activities. The agency business lead role will participate in both the Agency Preparation Phase and the System Implementation Phase, whereas other agency project resources will participate only in the System Implementation Phase.
18. Agencies will commit appropriate technical specialists to the project, the equivalent of a total of 1.5 FTE's (i.e., 1.0 FTE from OFM and 0.5 FTE each for CTED and ECY), to provide technical assistance to the project team. These resources will participate in application configuration, customization, interface, conversion, report development, and appropriate testing activities.
19. Agencies will commit appropriate business/program specialists to the project, the equivalent of 1.5 FTE's (i.e., 0.75 each for CTED and ECY), to develop and document test cases, test scripts and test data and to execute test scripts for the enterprise pilot and program enhancements.
20. Based on the high-level implementation plan presented in this report, it is assumed that the agencies will contract for up to 4.50 FTE's from external sources – implementation consultants and vendor consultants. External resources will provide project manager, functional lead, technical lead, technical architecture, and technical specialist roles on the project.

Appendix A. Revision Log

Date	Description	Author
March 21, 2006	Draft submitted for review	Tom Babington / Gary Hudson / Carol Baque
March 24, 2006	Revised after User Group review: *pp13-18:* replace Section 2.4 *pp18-21:* replace Section 2.5 *p22-24:* replace Section 2.6 *p.25:* change paragraph after diagram *pp30-32:* replace Section 4 *p33:* replace Section 5.1 *p41:* add second-last bullet item *pp42-44*: replace Section 8 *p48*: replace Section 9.5 *pp49-54:* replace Section 10 *pp57-58:* replace Section 12 Appendix B: replace MS Project Gantt chart	Tom Babington / Carol Baque
March 30, 2006	Revised after User Group review: *All:* change “grantee” to “recipient” for consistency *pp.8-9:* add row for Change Control Committee; expand acronyms *p.10:* Section 2.2.1, add third paragraph to reference “Definition of Requirements” *p.18:* update Program Liaison Team paragraph *pp.25-26:* section 2.7, change last sentence of paragraph after diagram; add last sentence to final paragraph *p.29:* section 3.1.2, change paragraph after bullets *p.32:* section 4.2, change acronym to GCLM *p.33:* add new section 5 Interfaces *p.34:* Section 6.1, change fifth paragraph for internal user training *p.37:* section 7.1.3, change last sentence *pp.43-45:* replace section 9 *p.48:* section 10.3, add third bullet on AFRS interface; add final two paragraphs *p.49:* section 10.4, add final paragraph *pp.51-52:* section 11.1, replace internal staffing table; update paragraphs; replace responsibilities table *p.54:* section 11.2.1, replace external staffing table; update paragraph after table *p.55:* section 11.2.2, replace responsibilities table Appendix B: replace Work Plan to match above changes	Tom Babington / Carol Baque
April 4, 2006	Revise after OFM review: *p.25:* replace paragraph under diagram	Carol Baque

Date	Description	Author
	p.43: rework 4th-last bullet item *p44:* correct title in first bullet item *p.51:* correct date in 2nd paragraph *pp.59-60:* correct title in Assumptions #12 and #15	

Appendix B.Work Plan

The Implementation Work Plan is attached as a separate document.

Appendix C. Supplemental Testing Information

The GCLM Implementation project's approach to testing should be based on industry best practices. Testing focuses primarily on the evaluation or assessment of quality realized through a number of core practices:

- Finding and documenting defects in software quality.
- Determining software quality.
- Proving the validity of the assumptions made in product selection through concrete demonstration.
- Validating the software product functions as configured.
- Validating that the requirements have been implemented appropriately.

Testing and quality assurance methodology begins during the requirements and analysis activities and continues through final acceptance testing. The approach to testing is to trace the requirements, both functional and non-functional, through the configuration and deployment of the solution.

Summary of Phases, Activities and Documentation

The table below provides a summary of major, minor and sub-activities of testing, grouped into the testing process phases of Preparation, Planning, Execution and Completion. These phases are logical groupings only and the timing of them will differ by implementation stream. In testing, Preparation is for gathering up the requirements and developing a strategy, Planning is for developing detailed test plans, scripts and data, Execution is for conducting the testing and Completion is for validating the application in production. Resources that are typically involved in the activities are listed in the final column of the table.

Phase	Major Activities	Minor Activities	Documentation / Sub-Activities
PREPARA-TION	Develop Strategy and Plan	Develop Test Strategy	Describe Project Quality Assurance and Test Objectives
			Define Scope of Testing
			Assess Risks, Constraints and Assumptions
			Determine Levels and Types of Testing
			Establish Testing Techniques
			Determine Testing Tools
			Establish Defect Tracking and Reporting Process
			Define Acceptance Criteria
			Describe Test Deliverables
			Identify Test Data
			Define Test Environment
			Identify Testing Support
			Describe Test Reporting
			Define Traceability Matrix
			Outline Roles and Responsibilities
		Develop Test Project Plan	Project Plan
		Conduct Testing Kick Off Meeting	Presentation Material
PLANNING	Develop Test Plans	Determine Test Scripts	Gather Existing Test Scripts
			Gather and Analyze Documentation
			Prepare an Inventory of Test Scripts and Objectives
			Develop a Traceability Matrix
		Develop Test Scripts	Test Script and expected outcomes
		Facilitate Test Script Development Workshop	Determine Test Script Priorities
			Conduct Reviews
			Test the Test Scripts
		Coordinate Test Data	Use Production Data
			Use Existing Data
			Build Data from Scratch
			Use Test Cycle Data
		Establish Test Environment	Develop Application Control Test Environment Architecture
		Develop a Detailed Test Execution Schedule	Testing Schedule

Phase	Major Activities	Minor Activities	Documentation / Sub-Activities
EXECUTION	Conduct Testing	Conduct Unit Testing	Implementer test plans
		Conduct Integration Testing	Implementation Team test plans
		Conduct System Testing	Establish System Testing Benchmarks
		Automate Testing Using Testing Tools	Testing tool procedures
		Maintain Test Script Inventory	Test Script Inventory
		Report on Status and Defects	Status Report
		Manage Defects/Issues	Defect/Issue List – Updateable
		Prioritize Defects/Issues	
		Retest Iterations	
		Backup the Test Environment	
		Migration and Release Management	Migration Schedule and Criteria
	Support UAT	Conduct a Test Script Execution Workshop	Test input and results documented
		Support the Testers	
COMPLETION	Validate Software in Production	Pilot the Application	Document Results
		Attend Cutover Meeting	
		Perform Performance Testing	Document expected outcomes
		Validate Application at Cutover	Receive Signoff

The Test Lead will develop high-level test plans to define the test strategy including proposed testing approach, established test environment setup and sample data, and required testing resources and responsibilities. The plan will identify at a high level the different phases of testing including unit, integration, system, user acceptance and performance testing. Stakeholders, traceability, error reporting, problem resolution mechanisms and acceptance criteria are defined in the Test Plan.

The system test plan outlines the requirements for testing the system, including a description of the testing environment, test scripts, traceability matrix, and test schedule. The project will develop complete test cases, test scripts, templates, checklists and the final schedule as part of the acceptance plan. Test cases will be developed from the use cases created during requirements analysis. A report for agency management and key stakeholders that documents findings related to the performance and stress testing of the system will be created by the implementation project.

Appendix D.Supplemental Data Conversion Information

Data conversion products may vary for each agency depending on the source of the data to be converted and migrated. The following is a list of possible data conversion products.

Deliverable	Description	When Delivered
Data conversion strategy	This document defines the data conversion objectives and scope, the conversion process and approaches to be used, the deliverables and work products, and roles and responsibilities of project team members.	This first data conversion deliverable should be delivered at the end of the first stage of the preparation phase.
Data conversion project plan	This plan, typically produced using project management software, shows the tasks, milestones, effort and resourcing needed to conduct the data conversion phase for the GC&L system.	The project plan is delivered together with the data conversion strategy.
Decommissioning strategy In some cases this may be the responsibility of OFM but will likely be to each agency. This should be clearly identified in the strategy.	This document defines the decommissioning objectives and scope, processes and approaches to be used, the deliverables, procedures and roles and responsibilities of each agency, program (ECY) or division (CTED) required to decommission a legacy system, manual process, or spreadsheet.	The decommissioning strategy should be delivered during the preparation phase of the conversion project.
Decommissioning project plan	This plan, typically produced using project management software, shows the tasks, milestones, effort and resourcing to conduct the decommissioning phase for the system.	This project plan is delivered together with the decommissioning strategy.
Conversion requirements document	This document includes dataflow/workflow diagrams, data business rules, the source to target data relationships, and data elements that must pre-exist in the new database.	This document, prepared as a result of JAD sessions, interviews, etc., conducted with the users, should be delivered and signed off prior to the beginning of implementation. For phased development, include only the source to target data relationships for the given phase.

Deliverable	Description	When Delivered
Data mapping requirements document	This document includes a data-mapping matrix outlining each source data element, how the data element will be transformed, and the data element's destination in the target database/system. The data-mapping matrix may also identify elements that must be cleansed before conversion.	The data analyst produces this document when all data requirements have been identified. The developers use this document to develop the conversion routines. It should be delivered and signed off prior to the beginning of implementation.
Technical design document	This document provides a detailed approach to the conversion process and outlines the conversion technical architecture; it may contain dataflow / dependency diagrams, a capacity plan, and data and program specifications.	This document is produced by the data conversion lead with input from the technical architect. It is used as a road map to develop the routines necessary for the conversion of data. The document should be delivered and signed off prior to the beginning of implementation.
Data cleansing plan	This plan outlines the activities required to perform data cleansing and the cleansing methods that will be used. Since it is usually not feasible to identify all areas of data cleansing during planning, it is expected that the data cleansing plan will require further updating as issues arise.	This document is delivered with the technical design document
Go live conversion event plan	This plan details in steps, the activities required to successfully convert the identified legacy data to the target database. The plan also identifies who is responsible for the activities and any interdependencies that might affect the process.	Developed by the data conversion lead, this document will be in draft form until the conversion process has been thoroughly tested. The initial version is created during the planning phase of the project and refined during the execution phase.
Development standards and conventions	This document defines the standards and conventions to be used in the conversion project.	Developed by the data conversion lead, this document is delivered after the start of the execution phase and will be used by developers, testers and others as a guide.
Data conversion programs	These are the routines, scripts or programs that are developed in order to convert the data. They could be custom programs or modified commercial off the shelf (COTS) programs.	These programs, scripts or routines are delivered during the execution phase of the conversion process.

Deliverable	Description	When Delivered
Data conversion reports (Statistics reports, not actual data)	These are the reports that are used to compare the pre- and post-converted data.	These reports are delivered during the execution phase of the conversion process, and will be used by the testers to verify results. It is preferable for testers to verify actual converted data within the new systems environment.
Conversion test scripts	These are the documented test conditions to be used during the execution phase of the conversion process.	Testers and user testers produce these scripts. They are produced before testing begins, and continually updated as testing progresses.
Conversion test results	These are the documented test results from the system and user acceptance and performance testing of the conversion routines.	Testers and user testers produce these results. They will be produced and continually updated throughout the testing process.
Converted data		At the end of the completion phase of the conversion project, the legacy data should have been successfully converted or migrated and verified.